SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-48

Name: Cookstove Dam **County(ies):** Stanley
Legal Description: T109N-R79W-Sec. 30 **GPS:** 44°12'42.671"N 100°22'02.637"W
Location from nearest town: 9 miles S and 1 W of Ft Pierre

Date of present survey: June 8-10, 2015 (netting)
Date of last survey: July 9-11, 2012 (netting)
Most recent lake management plan: None done
Management classification: Unknown

Primary Game Species	Secondary and Other Species
Largemouth Bass	Yellow Perch
Bluegill	

PHYSICAL DATA

Cookstove Dam is located in Stanley County. About 1/3 of the lake around and including the dam grade is owned by the United States Department of Agriculture, Forest Service and is part of the Fort Pierre National Grasslands. The other 2/3 of the lake is located on private property. The only structure at Cookstove is a dam grade, with is in good shape with only a little erosion starting.

Cookstove Dam is an 8 acre dam that had maximum depth at the time of survey in 2015 of about 13 feet with full water levels. Cookstove Dam is entirely surrounded by cattails and a few rushes. Submergent vegetation also surrounds the entire shoreline to depths of about 6.5 feet and consists of several different species of pondweeds. The combination of submergent and emergent vegetation around the lake limits the amount of shore fishing opportunities. There is also very limited boat access that would be limited to a canoe or small duck boat that can be loaded and unloaded by hand. There is good ice fishing opportunities. No contour map or depth contour as ever been done.

CHEMICAL DATA

No pollution problems were evident at the time of the survey. Water clarity was good with a secchi disc reading of 3 feet. Other water quality characteristics were measured in the field on June 8, 2015, using a HACH water quality kit and a Hanna multiparameter meter. Results are found in Table 1.

Table 1. Water chemistry results from Cookstove Dam, Stanley County, June 8, 2015.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/L)	HRD (mg/L)	pH	Cond. (µS/cm)	TDS (ppm)	Sal.	ORP	Secchi (ft)
A	Surface	74.0	2.72	35.0	157	171	7.16	380	189	0.18	-146.3	3
A	13	67.0	1.40	13.4	173	166	7.35	391	195	0.19	-154.5	

BIOLOGICAL DATA

Methods:

Cookstove Dam was sampled on June 8-10, 2015, with eight overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and ¾ inch knotted mesh. No experimental gill nets set or electrofishing done during this survey season. Fish indices and statistics were completed using Winfin.

Results and Discussion:

Trap Net Catch

Table 2. Total catch of eight, overnight ¾-inch frame nets at Cookstove Dam, Stanley County, June 8-10, 2015.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Bluegill	538	64.7	67.3	± 29.2	68.4	1	1	105
Yellow Perch	293	35.2	36.6	± 15.5	4.9	16	12	91
Largemouth Bass	1	0.1	0.1	± 0.2	1.4	--	--	90

* Three year mean (2006, 2009, 2012)

Bluegill

Bluegills continue to be the dominant species present in Cookstove Dam. The CPUE of 67.3 is right on with the three year mean of 68.4 (Table 2), but below the 93.6 from the 2012 survey. Size structure had declined drastically since the 2012 survey. The PSD of 1 with an RSD-P of 1 are below the 100 and 8, respectively. The decline can also be seen by looking at the length frequency histograms in Figures 1 through 4, which shows the length frequency histograms for the last 4 surveys. Growth is on the slow side with means slightly below statewide, regional, and SLI means (Table 3). Condition is good with a mean Wr of 105.

Table 3. Average back-calculated lengths (mm) for each age class of bluegill sampled from Cookstove Dam, Stanley County, 2015.

			Back-calculated Age									
Year Class	Age	N	1	2	3	4	5	6	7	8	9	10
2013	2	99	47	110								
2005	10	1	52	79	116	148	161	194	204	211	219	227
All Classes		**100**	**50**	**94**	**116**	**148**	**161**	**194**	**204**	**211**	**219**	**227**
Statewide Mean			55	103	141	166	180					
Region II Mean			52	97	134	164	180					
SLI* Mean			53	101	138	163	180					

* Small Lakes and Impoundments

Figure 1. Length frequency histogram for bluegill sampled from Cookstove Dam, Stanley County, 2015.

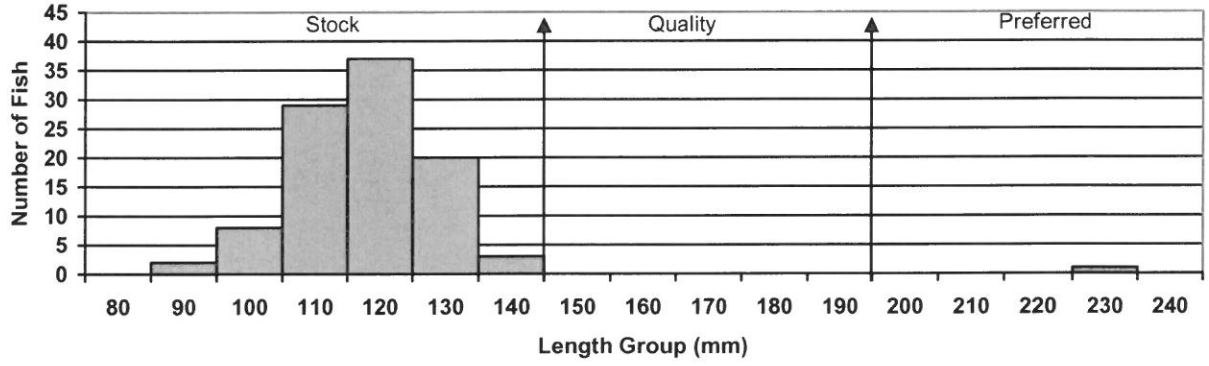


Figure 2. Length frequency histogram for bluegill sampled from Cookstove Dam, Stanley County, 2012.

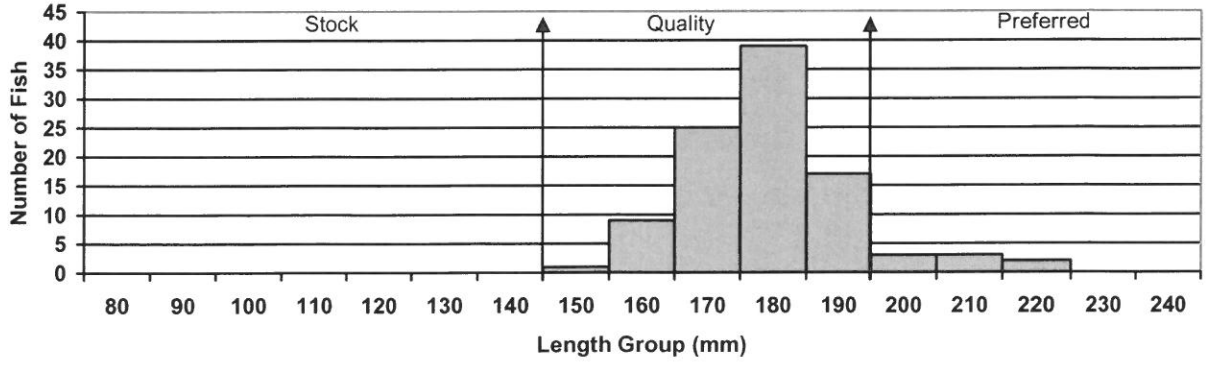


Figure 3. Length frequency histogram for bluegill sampled from Cookstove Dam, Stanley County, 2009.

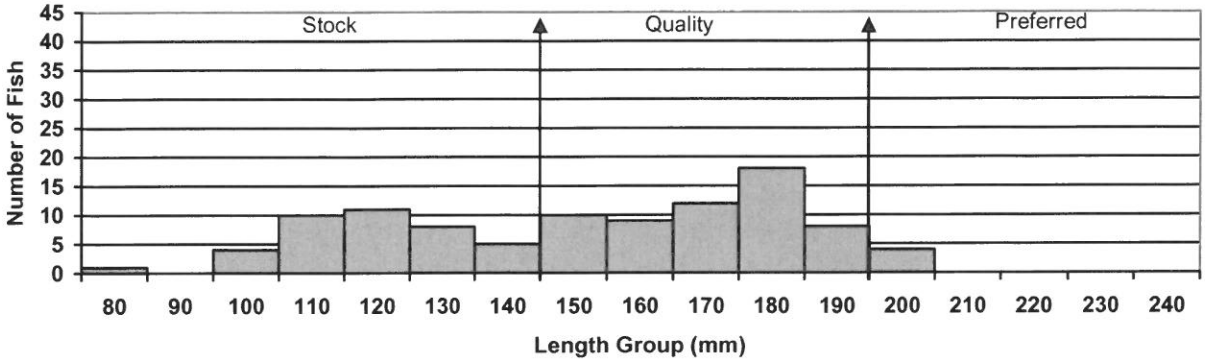
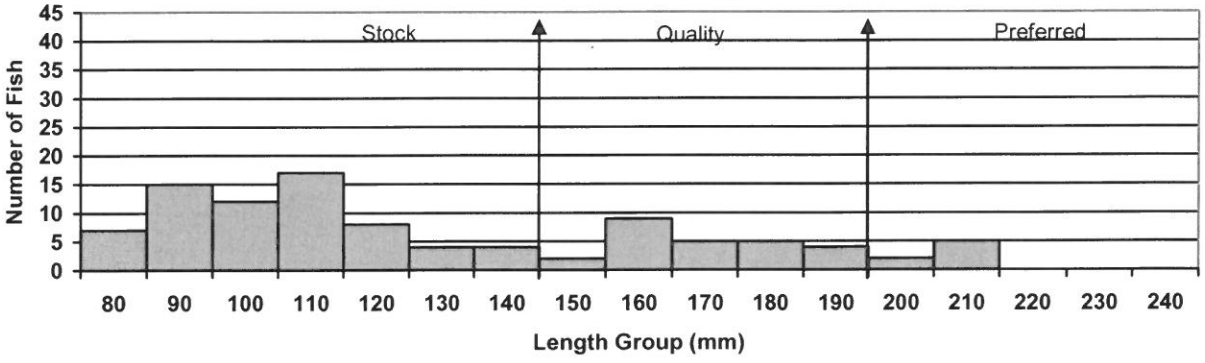


Figure 4. Length frequency histogram for bluegill sampled from Cookstove Dam, Stanley County, 2006.



Yellow Perch

The yellow perch population in Cookstove Dam is on the rise. The CPUE of 36.6 is significantly up from the 8.5 in 2012 as well as the 4.9 three year mean (Table 2). Growth continues to be slow with means below statewide, regional and SLI means (Table 4). Condition is fine with a mean Wr of 91. Figures 5 through 8 illustrate the length frequency histograms for the last four surveys. And the size structure is down which is expected with the big jump in population numbers. There are a lot more young fish that are recruiting to the population.

Table 4. Average back-calculated lengths (mm) for each age class of yellow perch sampled from Cookstove Dam, Stanley County, 2015.

			Back-calculated Age							
Year Class	Age	N	1	2	3	4	5	6	7	8
2013	2	82	88	137						
2012	3	6	76	155	184					
2008	7	10	76	113	145	169	195	246	260	
2007	8	2	80	124	154	181	205	218	277	289
All Classes		**100**	**80**	**132**	**161**	**175**	**200**	**232**	**269**	**289**
Statewide Mean			86	145	190	220	242			
Region II Mean			91	152	196	219	242			
SLI* Mean			87	142	185	205	219			

* Small Lakes and Impoundments

Figure 5. Length frequency histogram for yellow perch sampled from Cookstove Dam, Stanley County, 2015.

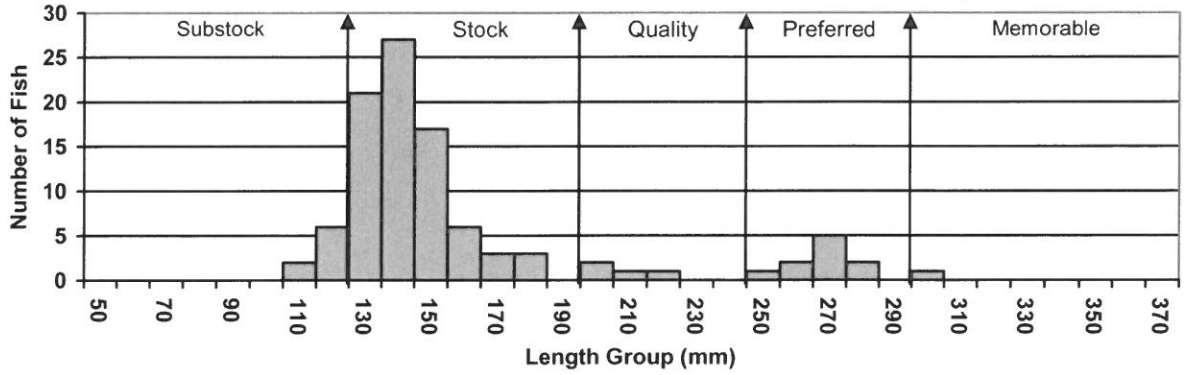


Figure 6. Length frequency histogram for yellow perch sampled from Cookstove Dam, Stanley County, 2012.

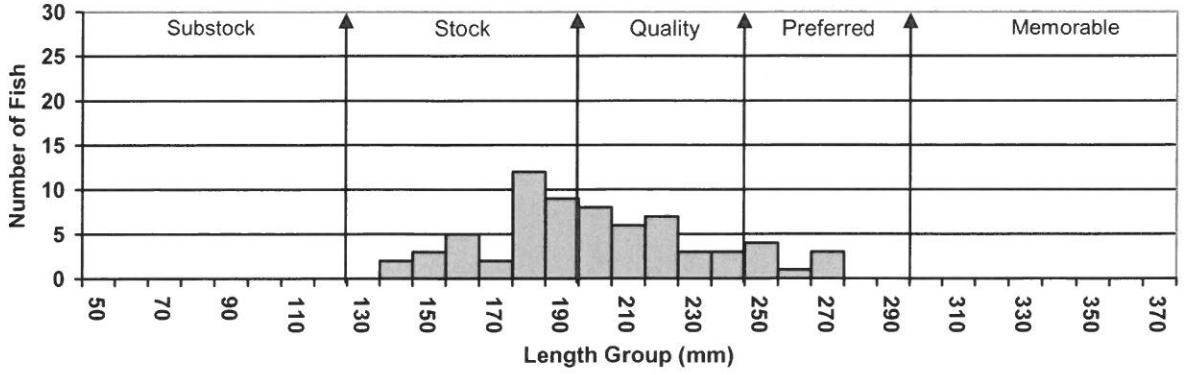


Figure 7. Length frequency histogram for yellow perch sampled from Cookstove Dam, Stanley County, 2009.

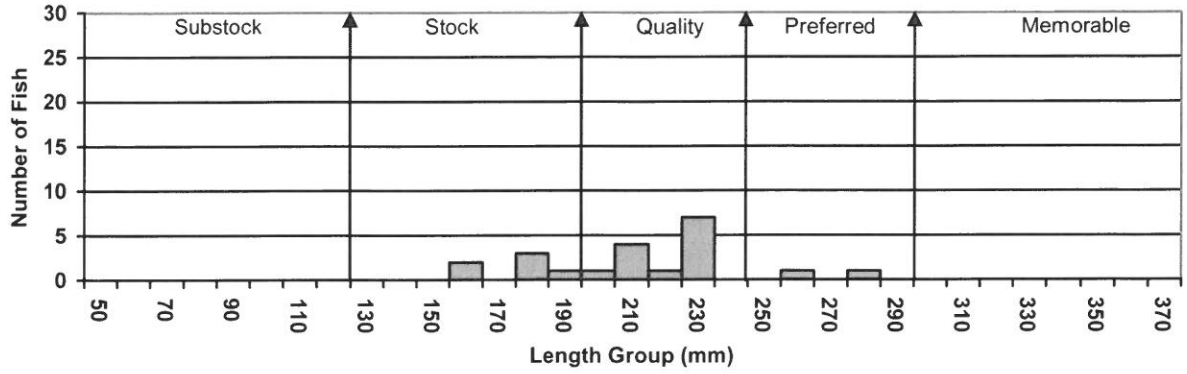
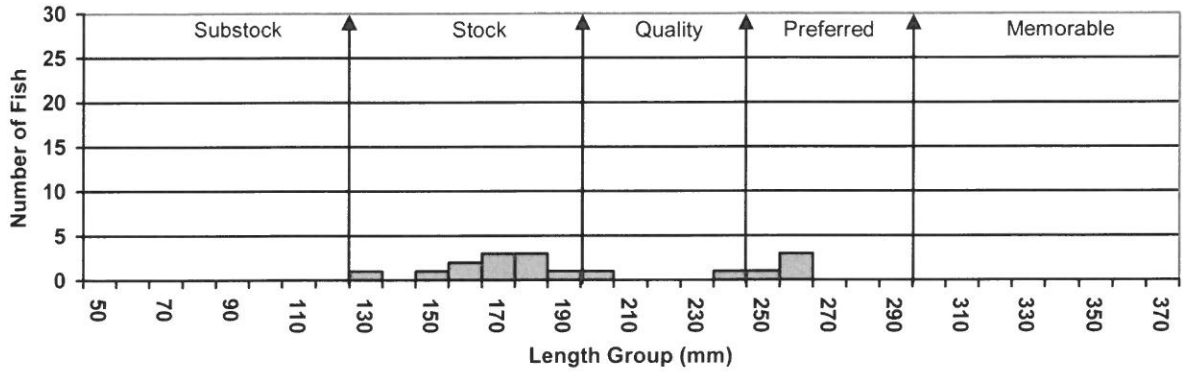


Figure 8. Length frequency histogram for yellow perch sampled from Cookstove Dam, Stanley County, 2006.



Largemouth Bass

It is assumed that Cookstove Dam contains a fairly decent largemouth bass population. The current survey on had 1 bass sampled, which is right on with the past three surveys. An electrofishing survey would be nice to be done on the lake to see what type of bass population actually does exist.

RECOMMENDATIONS

1. Resurvey in 2018 to further monitor the fish populations and to continually collect trend data on the lake.